



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/475,544	12/30/1999	MICHAEL PUTNAM	PGI6044P0020	6475
32116	7590	05/03/2004	EXAMINER	
WOOD, PHILLIPS, KATZ, CLARK & MORTIMER 500 W. MADISON STREET SUITE 3800 CHICAGO, IL 60661			TORRES VELAZQUEZ, NORCA LIZ	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicant No.	Applicant(s)	
	09/475,544	PUTNAM ET AL.	
	Examiner	Art Unit	
	Norca L. Torres-Velazquez	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4 and 6-92 is/are pending in the application.
- 4a) Of the above claim(s) 14-44 and 52-75 is/are withdrawn from consideration.
- 5) Claim(s) 45 and 46 is/are allowed.
- 6) Claim(s) 1,2,4,6,7,9-13,47-51 and 76-92 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's amendment and arguments filed January 27, 2004 have been entered and fully considered but they are not persuasive.

a. Applicants argue that those skilled in the art do not consider hydroentanglement and needlepunching processes to be equivalent since needlepunching will cause damage to fiber/filament.

The Examiner clarifies that both hydroentanglement and needlepunching provide mechanical means to produce a nonwoven by entangling the fibers. Applicant's arguments include literature that supports Applicant's position that there are differences between the nonwovens produced by needlepunching and hydroentanglement, in which needlepunched nonwovens are typically stronger and heavier than other nonwoven products. The Examiner maintains her position that both hydroentanglement and needlepunching provide equivalent mechanical means to produce a nonwoven, however, depending on the final use or properties desired in the product one would be preferred over the other. Applicants submitted literature further provides motivation to use hydroentanglement over needlepunching to produce fabrics that compete directly with needlepunched nonwovens. One of ordinary skill in the art would be motivated to use hydroentanglement over needlepunching because hydroentanglement has quicker line speeds and is able to keep the fibers from damage. (As disclosed in literature provided by Applicants from NonwovensIndustry.com).

b. With regards to the Kelly et al. reference, applicants argue the Kelly et al. reference contemplate fabric formation “by hydroentanglement, the activation of thermally activatable fibers, or the use of a bonding agent”, and that there is simply no suggestion whatsoever in this reference of initially effecting thermal bonding, and subsequently effecting hydroentanglement, as claimed.

It is noted that Kelly et al. teaches the use of hydroentanglement in addition to one of the methods of bonding refer above by Applicants. (Page 5, lines 5-11 of Kelly et al.)

2. Applicant’s arguments, see page 15 of amendment, filed January 27, 2004, with respect to the elongation values presently claimed have been fully considered and are persuasive. The 35 U.S.C. 103(a) rejections of claims 8, 13, 45 and 46 have been withdrawn.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-2, 4, 9-12 and 47-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over DORSCHNER et al. (US 3,692,618) in view of KUSUNOSE et al. (US 4,107,374).

DORSCHNER et al. teach the formation of a nonwoven web suitable for the production of textile-like or paper-like sheet material. The nonwoven web is formed by simultaneously spinning a multiple number of continuous filaments of a synthetic polymer. The filaments as they are spun are gathered into a straight row of side-by-side, evenly spaced apart, untwisted bundles each containing at least 15 and preferably from 50 to 150 filaments. The reference further teaches that the gathering of the filaments into the bundles and their drawing and directing to impinge on the carrier is preferably effected by passing the bundles through air guns

which surround the filaments with a column or jet of air which is directed downward at supersonic velocity. The filament bundles containing a number of parallel filaments are laid down on the carrier in a loop-like arrangement with primary loops extending back and forth across the width of a section defined by the impingement of the air column from one air gun on the carrier. (Column 3, lines 28-62)

The reference further teaches the use of polymeric fibers made of thermoplastic polymer capable of forming a melt, which can be spun, such as polyolefins, polyester and polyamides. (Column 4, lines 1-14). DORSCHNER et al. further teaches that the filaments produced by the spinning apparatus are preferably drawn to a thickness of from about 10 to 50 microns and are thus in the textile denier range, e.g., the filaments may have denier values of from about 1 to 20, although lower or higher denier filaments may be used depending on the end product to be formed. In forming a nonwoven web suitable for the production of textile-like sheet material, filaments of from 1 to 10 denier would be used. The drawn filaments generally have an elongation at break above 80%. (Column 4, lines 40-54) On Examples 3 and 4, the reference discloses webs with basis weight of 100 grams/m². (Columns 13 and 14).

Regarding the claimed ranges for the limitations of fiber entanglement frequency, fiber entanglement completeness value and fiber interlock value the ranges are broad and encompass typical values that are found in the prior art. Further each of the elements are recognized as result effective variables in this field of endeavor and it has been held that discovering optimum values would have been obvious as optimization of result effective variables involves only routine experimentation. Regarding claims 47-51, it is well settled that the mere duplication of

parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960).

While Dorschner et al. teaches needling of the web after it is laid down (Column 10, lines 28-31); it fails to teach the use of hydroentanglement.

KUSUNOSE et al. discloses a nonwoven fabric usable as a substratum sheet for artificial leather that comprises numerous fibrous bundles entangled with each other to form the body of the nonwoven fabric. (Refer to claim 1). The reference further teaches that when the filament bundles are in the form of continuous filaments, they can be massed into a flat sheet form by being randomly accumulated on a wire net. This accumulating operation may be effected by ejecting the filament bundles together with a jet of a fluid, into the wire net. By the action of the jets of fluid, the fibrous bundles are mutually entangled and intertwined. (Column 4, lines 34-68) It is the Examiner's position that the fibrous bundles taught by KUSUNOSE et al. read on the present meshed coils and loops.

DORSCHNER et al. discloses the claimed invention except that it uses needling instead of hydroentanglement, KUSUNOSE et al. show that hydroentanglement is an equivalent process known in the art that provides mechanical means to produce the nonwoven. Therefore, because these two processes were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the needling process for hydroentanglement of the filaments to form the nonwoven fabric with the motivation of entangling and intertwining the fibrous bundles by the action of the jets of fluid, as disclosed by KUSUNOSE et al. (Column 4, lines 64-68). Further, also motivated by the fact that hydroentanglement has quicker line speeds and is able to keep the fibers from damage. (As

Art Unit: 1771

disclosed in literature provided by Applicants from NonwovensIndustry.com, Refer to response to arguments above).

4. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over DORSCHNER et al. (US 3,692,618) in view of KUSUNOSE et al. (US 4,107,374) as applied to claims 1-2, 4, 9-12 and 47-51 above, and further in view of SUSKIND et al. (US Patent 4,808,467).

The references fail to teach the use of a surface treatment and also fail to teach the use of their fabrics in articles such as medical apparel.

SUSKIND et al. discloses a spunlaced fabric suitable for disposable medical applications that is produced by hydraulically entangling wood pulp and staple fibers with a continuous filament base web producing a nonapertured high strength fabric, and treating the fabric with a fluorocarbon water repellant. (Column 1, lines 12-17).

The reference teaches the use of polyethylene, polypropylene, polyester and nylon as polymers from which the continuous filaments are made. (Column 3, lines 7-11).

Since DORSCHNER et al., KUSUNOSE et al. and SUSKIND et al. from the same field of endeavor, the purpose disclosed by SUSKIND et al. would have been recognized in the pertinent art of DORSCHNER et al. and KUSUNOSE et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the nonwoven fabric and provide it with a fluorocarbon water repellant with the motivation of using it as a disposable medical fabric as disclosed by SUSKIND et al. above.

Art Unit: 1771

5. Claims 76-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over DORSCHNER et al. and KUSUNOSE et al. (US 4,107,374) as applied to claim 1 above, and further in view of KELLY et al. (WO 96/13071).

DORSCHNER and KUSUNOSE fail to teach the bonding of the multicomponent fibers prior to hydroentanglement.

KELLY et al. discloses a non-woven fabric material that exhibits good strength. Preferred embodiments of material are described, in which the material is bonded, for example by hydroentanglement, the activation of thermally activatable fibers, or the use of a bonding agent. (Abstract). The reference further teaches that dry laid fibers can be bonded using a bonding agent, and alternatively or additionally, the dry laid fibers can be bonded by hydroentanglement. (Page 5, lines 5-11)

Since KELLY et al. is also directed to nonwoven fabrics, the purpose disclosed by KELLY et al. would have been recognized in the pertinent art of DORSCHNER et al. and KUSUNOSE et al.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the nonwoven web and provide with bonding prior to hydroentanglement with the motivation of producing a material that exhibits good strength as disclosed by KELLY et al. (Abstract)

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

Art Unit: 1771

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-2, 4 and 6-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 and 6-13 of copending Application No. 09/287,673. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cross machine elongation property claimed in the present application would have been an obvious property once the hydroentangled nonwoven is provided.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

5. Claims 45 and 46 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach a hydroentangled nonwoven fabric of the present invention that particularly has a machine direction elongation values of at least 75% and a cross-direction elongation value of at least 90%.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1771

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NLTV
Norca L. Torres-Velazquez
Examiner
Art Unit 1771

April 26, 2004

Elizabeth M. Cole
ELIZABETH M. COLE
PRIMARY EXAMINER